AMENDMENTS TO THE CLAIMS:

1. (currently amended) A therapeutic composition, comprising a substantially pure composition of monopotent mammalian megakaryocyte progenitor cells, wherein at least 80% of the cells in said composition express CD41, CD9 and CD34 and do not express CD2; CD3; CD4; CD7; CD8; CD10; CD11b; CD14; CD19; CD20; CD56; and glycophorin A (GPA), and wherein the cells in said composition that express CD41, CD9 and CD34 and do not express CD2; CD3; CD4; CD7; CD8; CD10; CD11b; CD14; CD19; CD20; CD56; and glycophorin A (GPA) give rise exclusively to megakaryocyte colonies;

and a physiologically acceptable medium.

2-3. (canceled)

4. (previously presented) The composition of Claim 1, wherein said megakaryocyte progenitor cells, when cultured in methylcellulose with steel factor (SLF), flt-3 ligand (FL), interleukin (IL)-3, IL-11, GM-CSF, thrombopoietin (Tpo) and erythropoietin (Epo) give rise to megakaryocyte colonies.

5. (original) The composition of Claim 1, wherein said megakaryocyte progenitors are mouse cells.

6. (withdrawn) The composition of Claim 1, wherein said cells are genetically modified to comprise an exogenous DNA vector.

7. (previously presented) A method of enrichment for a composition of monopotent mammalian megakaryocyte progenitor cells, wherein at least 80% of the cells in said composition express CD41, CD9 and CD34 and do not express CD2; CD3; CD4; CD7; CD8; CD10; CD11b; CD14; CD19; CD20; CD56; and glycophorin A (GPA), the method comprising:

combining reagents that specifically recognize CD41, CD9, CD34, CD2; CD3; CD4; CD7; CD8; CD10; CD11b; CD14; CD19; CD20; CD56; and glycophorin A (GPA) with a sample of hematopoietic cells; and

selecting for those cells that express CD41, CD9 and CD34 express CD41, CD9 and CD34 and do not express CD2; CD3; CD4; CD7; CD8; CD10; CD11b; CD14; CD19; CD20;

CD56; and glycophorin A (GPA), to provide an enriched population of cells having megakaryocyte progenitor activity.

8. (original) The method according to Claim 7, wherein said sample of hematopoietic cells is bone marrow.

9. (original) The method according to Claim 8, wherein said sample of hematopoietic cells is mobilized peripheral blood.

10-11. (canceled)

12. (withdrawn) A method of providing platelets to a mammalian recipient, the method comprising:

administering to said recipient a population of megakaryocyte progenitor cells, wherein at least 80% of the cells in said population are characterized as $CD41^+$, $CD9^+$, $CD34^+$;

wherein said megakaryocyte progenitor cells give rise to platelets *in vivo*.

13. (withdrawn) The method according to Claim 12, further comprising administration of thrombopoietin or a mimetic thereof in conjunction with said megakaryocyte progenitor cells.

14. (canceled)

15 (new) The therapeutic composition of Claim 1, wherein the composition is frozen at liquid nitrogen temperatures.

16. (new) The composition of Claim 1, comprising at least 10^6 monopotent mammalian megakaryocyte progenitor cells.